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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/355,729	05/10/2000	GORAN HOLMSTROM	705/71953-2/	6851
22850	7590	03/24/2004		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER MULLINS, BURTON S	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/355,729

**Applicant(s)**

HOLMSTROM ET AL.

**Examiner**

Burton S. Mullins

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2002.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 25-46 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 25-30 and 34-46 is/are rejected.  
7) ☒ Claim(s) 31-33 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Pursuant to the Board of Appeal's final decision regarding U.S. Application No. 08/973,019, suspension has been lifted. As set forth in the decision on petition requesting suspension, the instant application was granted a suspension pending the decision on appeal of the '019 application. On November 27, 2002, the Board affirmed the rejection of the '019 application and on August 27, 2003, the Board denied applicant's request for reconsideration, thus terminating prosecution of the '019 application. An action on the merits follows.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 25-30 and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck (USP 3,014,139) in view of Balke (USP 2,778,964). Shildneck discloses the machine essentially as claimed except for providing cuff means at the end surface of the stator slots.

Balke teaches that it is known to provide an insulating assembly for the stator slots comprising a slot liner made of a resilient insulating material to provide support and prevent undesirable axial movement of the winding and provide insulation between the edge of the slot and the end turns of the coils within the slot (c.2, lines 70-72 & c.3, lines 1-7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided cuff means as disclosed by Balke to the stator slots of

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Shildneck, since such a modification according to Balke would provide support and prevent undesirable axial movement of the winding and provide insulation between the edge of the slot and the end turns of the coils within the slot. Moreover, Balke discloses his cuffs 15 are optional contingent upon the design requirements.

4. Claims 35-37, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck and Balke as applied to claim 25 above, further in view of Elton (US 4,853,565). Shildneck and Balke disclose the claimed invention except for having the stator winding comprising semiconducting layers.

Elton discloses a cable (Fig.6) with stranded conductors surrounded by a first inner semiconducting insulation layer (104), an intermediate solid insulation layer (106) and an outer semiconducting insulation layer (110) connected to ground. Elton's arrangement helps to prevent corona discharge between the cable and the surrounding elements (abstract; c.2, lines 44-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided in the machine of Shildneck a cable comprising an inner layer having semiconducting properties, an insulating layer surrounding the inner layer and an outer layer having semiconducting properties, as disclosed by Elton ('565) in order to prevent corona discharge from the windings.

Regarding claim 36, Shildneck's cable dimensions fall in the range claimed by applicant (c.4, lines 40-46).

5. Claims 38 and 40 are rejected under 35 U.S.C. j 103(a) as being unpatentable over Shildneck, Balke and Elton ('565) as applied to claim 37 above, further in view of Elton (US

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4,622,116). Shildneck, Balke and Elton ('565) disclose the claimed invention except for the semiconducting layers having the same coefficients of thermal expansion.

Elton '116 teaches that it is well known to form different overlapping insulations with the same coefficient of thermal expansion in order to prevent thermal stress to separate and crack the materials to cause failure of the insulation (see c.7, lines 38-44).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the semiconducting layers and insulation of Shildneck, Balke and Elton ('565) such that the different layers of insulation had similar or the same coefficient of thermal expansion, as disclosed by Elton ('116), in order to prevent failure caused by thermal aging and cycling.

6. Claims 39 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shildneck, Balke and Elton ('565) as applied to claim 37 above, further in view of Haxton (US 5,902,958). Shildneck, Balke and Elton ('565) disclose the claimed invention except for the material of the cable layers having a modulus of elasticity less than 500 Mpa.

Haxton teaches that it is known to form the inner sheath 6 and outer sheath 11 of a high voltage cable having modulus of elasticity from 90 Mpa to 600 Mpa.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected a cable with modulus of elasticity similar to that as taught by Haxton since according to Haxton such a modification would provide a cable that is highly flexible having lower minimum bend radius.

*Allowable Subject Matter*

7. Claims 31-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Response to Arguments*

8. Applicant's arguments filed April 15, 2002 have been fully considered but they are not persuasive. Applicant provided various arguments as to why the combination of the cited references, e.g., Shildneck, Balke, Elton '565, Elton '116 and Haxton are not obvious, since the references fail to teach or suggest certain features and motivations to combine. In particular, applicant argues that Shildneck lacks a high voltage cable as a winding that is drawn through the slots of the stator. However, the specification defines "high voltage" as meaning voltages in excess of 10 kV. Shildneck was described in the declaration of Mr. Robert Fenton to operate at voltages from 10kV to 15 kV (p.19, paragraph 43) and hence can be defined by applicant's own terms as a "high voltage" machine. Further, Shildneck's cable is drawn through slots of the laminated stator core 2/14 (Figs.1-3), and the cable is flexible (c.2, lines 39-41).

With regard to applicant's assertion that Elton's cable would not be suitable as a winding in an electric machine, the examiner points out that Elton clearly intends the insulated conductors for use as windings in a dynamoelectric machine (abstract; c.4, line 50-c.6, line 4; c.8, lines 45-60; Figs.1-6). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be

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established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Elton's cable winding minimizes the possibilities of corona discharge, maintains resistivity value after impregnation, minimizes voids and maintains uniform and equal electric potential (c.2, lines 44-60); while Grant clearly teaches that it is advantageous to use springs to maintain the windings tight within the slots over the age of the machine (c.4, lines 7-13).

Examiner disagrees with applicant's argument that the cable of Elton et al. (1565) is stiff due to the presence of the semiconducting layer made of pyrolyzed glass layer. The rigidity of a conductor cable primarily depends on the type of insulation used. See Shildneck c.2, lines 28-30, which teaches that the rigidity of the conductor bars depend on the type of insulation used. Shildneck uses silicone-rubber insulation for his flexible cable. Moreover, as is known in power cables, cable flexibility primary depends upon the use of ethylene-propylene (EPM) and ethylene-propylene-diene (EPDM) rubbers as insulation rather than of the semiconducting layer. In addition, Elton ('565) in column 8, lines 3-9, teach that the semiconducting pyrolyzed glass layer can be chopped, mixed with resin and molded or blown on any complex shaped substrate so that the layer can be placed in intimate contact with substantially all of the exterior surface of the insulator or housing. As such, the semiconducting layer can be shaped or molded according to design, in this instance, with a cable without causing cable rigidity.

*Information Disclosure Statement*

9. The information disclosure statements submitted on January 17, 2001, May 18, 2002 and October 21, 2002 have been considered by the examiner.

*Conclusion*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm  
March 17, 2004